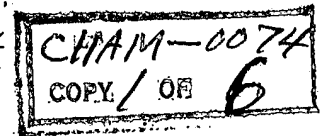


SECRET



CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION

SAN DIEGO 12, CALIFORNIA

TELEPHONE: CYPRESS 6-6611

19 August 1958

11-0-3198

CCS/mcs

25X1 To: Chief, Bureau of Aeronautics
Navy Department
Washington 25, D. C.

Subject: Contract NOas 58-812

Enclosure: (1) Statement of Work -
Continued Studies

1. Subject contract provides for submittal of a final report on 15 September 1958. Convair has requested authority to continue subject study through 31 October 1958 to accomplish the objectives set forth in the opening paragraph of the statement of work submitted herewith as Enclosure (1).

2. The work to be accomplished during this period is set forth in detail in Enclosure (1) together with a proposed program schedule.

3. Convair would propose to conduct this additional work under this contract for a total estimated cost of \$32,710 plus a fixed fee computed at the rate of seven percent of \$2,290, making a total estimated cost plus fixed fee of \$35,000. The details of this estimated cost are submitted on page 3 of Enclosure (1) under heading of "Cost Summary".

4. Convair represents that it has not employed or retained any company or person (other than a full-time bona-fide employee working solely for the Contractor) to solicit or secure this contract and that it has not paid or agreed to pay any company or person (other than a full-time bona-fide employee working solely for the Contractor) any fee, commission, percentage or brokerage fee contingent upon or resulting from the award of this contract; and agrees to furnish information relating thereto as requested by the Contracting Officer.

5. Convair will be pleased to submit any additional information that may be required either in writing or by oral presentation.

CONVAIR

A Division of General Dynamics Corporation

GENERAL OFFICES: SAN DIEGO, CALIFORNIA

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STATEMENT OF WORK
PROJECT HAZEL CONTINUED STUDIES

Enclosure (1) to
Letter 11-0-3198

COPY 1 OF 6

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Objective - To continue the overall [] system studies, with particular emphasis on the effects on Vehicle performance of the various parameters such as;

Configuration favoring low radar and IR detectability;
Engine size, number, location, and engine inlet type and location;
Maneuverability effects on engine size and operating temperature;
Type of engine fuel; and payload weight volumes variation.

If other important variables are uncovered during the study, they will, in turn, be evaluated.

To continue studies to determine the optimum booster systems for the most promising vehicle. These booster systems will be investigated, considering efficient test program implementation, as well as, ultimate system operation.

The necessary facility requirements for developing the system (engines, vehicle, boosters, etc.) will be investigated. The practicability of substituting full size flight test in lieu of full size ground test (requiring large facilities) will be considered.

I. Radar Visibility

Using Convair generated and Contracting Agency provided criteria, evaluate the radar reflectivity (cross section) of various vehicle configurations. Consider such variables as lower surface reflectivity, engine, equipment, and pilots capsule location.

II. Infra-red Visibility

Using Convair generated and Contracting Agency provided criteria determine the relative IR visibility of various configurations considering engine exhaust, aerodynamic heating, and engine hot parts.

III. Construction

Consider the relative merits of various construction methods including pressure stabilized non-metallic foldable, pressure stabilized non-foldable, and conventional aircraft types.

IV. Arrangement

Study and evaluate various vehicle arrangements with particular regard to radar and infra-red visibility. Multi-engine arrangements, pilots capsule, payload, and fuel storage locations will be included.

V. Performance

Determine the performance effects of the various design features developed in I to IV above. Aerodynamic performance evaluation will include range, altitude, speed, etc. as well as maneuverability. The effect of payload variation will also be determined.

STATEMENT OF WORK - PROJECT HAZEL CONTINUED STUDIES
PAGE TWO -

Propulsion performance evaluation will include the effect of various inlet configurations. The data received from the engine contractors will be compared and applied to the vehicle designs. Engine contractor capability to produce the required engines, from both an engine and the necessary development facilities standpoint, will be investigated.

VI. Boost Systems

Various boost arrangements will continue to be evaluated and particular emphasis will be placed on early capability systems adaptable to flight test programs.

VII. Facilities Study

Studies will be conducted to determine the necessary facility requirements to develop these systems. Particular emphasis will be placed on methods of developing the systems, not requiring complex and costly facilities. Flight testing will be considered in place of ground testing.

VIII. Development Program Planning

Studies will be conducted to determine a preliminary Development Test Program to prove the practicability of the system within as economical, and as short a time scale as possible. These studies will take full account of the unique low "q" operational advantage of these systems.

Reports

The original Hazel contract provides for a final report to be submitted 15 September 1958. Per Convair request, the Contracting Agency agreed to defer this to 31 October 1958. The additional study work to be accomplished under this statement of work will be executed to the following schedule.

Schedules

Effective Start Date of this Continued Study	15 August 1958
Presentation	22 September 1958
Study complete	17 October 1958
Final Report	31 October 1958

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STATEMENT OF WORK - PROJECT
PAGE THREE

CONTINUED STUDIES

Cost Summary

Engineering Direct Labor		
3963 hours @ \$4.31/hr.		\$17,030
Overhead		
3963 hours @ \$3.25/hr.		<u>12,830</u>
		\$29,960
IBM 704 Computer:		
4 hours @ \$350/hr.		1,400
Travel		
3 man-trips 3 x 350		1,050
Per Diem		
5 days/trip \$20/day		<u>100</u>
Total Estimated Cost		\$32,710
Seven Percent Fixed Fee		<u>2,290</u>
Total Estimated Cost Plus Fixed Fee		<u>\$35,000</u>

32,710
 2,290

 35,000

58,661
 7

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